

REMARKS

Claims 1-7 are pending in this application. Claims 1, 3 and 7 are independent claims. By this amendment, claims 1, 3 and 7 are amended.

Reconsideration in view of the above amendments and following remarks is respectfully solicited.

Personal Interview

Applicant wishes to thank Examiner Khanh Nguyen for the courtesies extended to Applicant's representative, Carolyn Baumgardner, during the January 25, 2005 personal interview. During the interview, the differences between the claimed invention and the cited references were discussed. Particularly, applicant highlighted the "variable impedance characteristic of the diode" to the Examiner. The substance of the personal interview is summarized in the following remarks.

No Drawing Corrections Needed

The Office Action objects to the drawings because the Examiner alleges that all features are not shown therein. Applicant respectfully traverses this objection.

Specifically, the examiner alleges that a negative feedback circuit connected between a *grounding terminal* of the power amplifier and the *ground* as specified in claim 1 is not shown in the drawings. Applicant disagrees with this allegation and

respectfully submits that all features are indeed shown in the drawings.

For example, applicant respectfully directs the examiner's attention to Fig. 2 of the present application wherein "a power amplifier 22 and a negative feedback circuit 23 connected between a grounding terminal of the power amplifier and ground" is clearly shown.

As such, Applicant respectfully requests withdrawal of the objections to the drawing.

The Claims Satisfy The Requirements Of
35 U.S.C. §112, 2nd Paragraph

The Office Action rejects claim 1 under 35 U.S.C. §112, 2nd paragraph. This rejection is respectfully traversed.

For at least the reasons noted above regarding the objection to the drawings, applicant respectfully submits that claim 1 does indeed particularly point out and distinctly claims the subject matter which applicant regards as the invention.

For example, as noted above, Fig. 2 clearly shows a power amplifier and a negative feedback circuit connected between a grounding terminal of the power amplifier and ground. As such, applicant respectfully submits that claim 1 is properly shown in the figures and the rejection under 112 should be withdrawn.

Accordingly, withdrawal of the rejection of claim 1 under 35 U.S.C. §112, 2nd paragraph is respectfully solicited.

The Claims Define Patentable Subject Matter

The Office Action rejects: (1) claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,452,452 to Furino (hereafter Furino); (2) claims 1-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,098,199 to Carney et al. (hereafter Carney); and (3) claims 1 and 2 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,914,640 to Nasserbakht (hereafter Nasserbakht). These rejections are respectfully traversed.

Applicant respectfully submits that the claimed invention is distinguishable from each of Furino, Carney and Nasserbakht, either alone or in combination, for at least the following reasons:

Please note that in the parent case (serial no. 09/993,698) the Examiner made similar rejections to the claims as made in the present case.

For example, as for Furino, the examiner alleges that Furino discloses the claimed invention except the claimed impedance of the negative feedback being dependent upon a signal voltage occurring across the negative feedback circuit. The examiner further alleges that it would have been obvious to have changed the component value of the feedback circuit (50,60) of Furino to obtain a desired change of the impedance and likewise increasing the input signal of Furino would have resulted in the increase of the feedback impedance. (see Office Action, page 3).

As in the parent case, the examiner is now also relying on Furino's Fig. 3 and alleges that Furino discloses a power amplifier 30 and a negative feedback circuit comprising a diode 50 and a capacitor 60 connected in series.

However, applicant respectfully points out that Furino merely discloses in Fig. 3 an NPN transistor amplifier 30 and a negative feedback path through an electronically controllable conductance between the collector 33 and the base 31 of the amplifier 30. The electronically controlled conductance of Furino comprises the diode 50 which has its forward conductance varied by adjusting a current flow through a controllable current source 40. (see Furino's Fig. 3).

In the present invention, on the other hand, impedance of the negative feedback circuit depends on a signal voltage occurring across the negative feedback circuit, and the negative feedback circuit is a series connection circuit consisting essentially of a diode and a capacitance device connected in series or a series connection circuit in which a diode, a capacitance device and a feedback resistor are connected in series, wherein the diode has a variable impedance characteristic.

For example, in the present invention, an input power signal, P_{in} , fed to the signal input terminal of the power amplifier is amplified by the power amplification circuit and sent out as an output power signal, P_{out} . The gain of the power amplifier depends on the input power signal, P_{in} . An impedance device exhibits an increasing impedance Z_1 with an increasing input power signal P_{in} .

Thus, the impedance device has a variable characteristic that can suppress any gain decreases in the amplification circuit.

In contrast with the present invention, Furino is merely concerned with the variable conductance property of its circuit, which is the reciprocal of electrical resistance (impedance). Thus, Furino fails to teach or suggest having an impedance of the negative feedback circuit being dependent upon a signal voltage occurring across the negative feedback circuit.

Furthermore, Furino fails to specifically teach that amplifier 30 is a power amplifier. Furino merely refers to a signal to be amplified. (see Furino, col. 3, lines 7-15).

In addition, applicant respectfully submits that the examiner fails to provide any proper motivation for modifying Furino to arrive at the claimed invention. For example, the Office Action merely states that it would have been obvious to change the component value of the feedback circuit to obtain a desired change of the impedance of the feedback, without providing any motivation for arriving at this result. (see Office Action, page 3). As such, applicant respectfully submits that only through impermissible hindsight reconstruction using applicant's invention would one find motivation to modify the Furino device to have all of the claimed features. Applicant submits that the Office Action has improperly used applicant's invention as a road map to pick and choose features and paste the chosen features together to arrive at the claimed invention, even though the reference does not provide any teachings, suggestion or motivation to make the modification.

As for Carney, the Office Action admits that Carney fails to disclose the impedance of the negative feedback depends on a signal voltage occurring across the negative feedback circuit. (see Office Action, page 4).

Carney merely discloses a video amplifier circuit incorporating a bipolar gain control feature. Specifically, in Carney, a transistor 10 is utilized as the amplifying element and a varying amount of negative feedback, resulting in a gain control feature, is provided by a pair of series-connected, oppositely-poled diodes 22 and 23 which are coupled by a pair of capacitors 24 and 25. (see Carney's Fig. 1). In Carney, when the input signal increases, a negative D.C. gain control voltage related to an average magnitude of the output signals will appear. This will establish a given forward bias level for the diodes 22 and 23.

Thus, it can be seen that, Carney fails to disclose that the diode has a variable impedance characteristic. Therefore, Carney also fails to teach or suggest the claimed feature that "the diode has a variable impedance characteristic."

Furthermore, the Examiner uses the exact same obviousness-type argument as for Furino to try to show why the claimed invention is obvious over Carney. As noted above, we believe the Examiner has failed to provide a proper motivation for why one would modify Carney to arrive at the claimed invention and is merely using improper hindsight reconstruction reasoning.

As for Nasserbakht, the Examiner alleges that Nasserbakht discloses the claimed invention as set forth in claims 1 and 2,

except for the impedance of the negative feedback being dependent upon a signal voltage occurring across the negative feedback circuit. (see Office Action, page 5). The Examiner is relying on Figs. 1-3 of Nasserbakht. However, like Furino and Carney, Nasserbakht also fails to teach or suggest that the diode has a variable impedance characteristic.

To establish a *prima facie* case of Obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

Applicant respectfully submits that not only does the each of the cited references fail to teach or suggest each and every feature as set forth in the claimed invention, but that one of ordinary skill in the art would not have been motivated to combine/modify the teachings of such references because there is no teaching or suggestion in any of the references regarding how or

why one would modify such systems to arrive at the claimed invention.

Applicant respectfully submits that independent claims 1, 3 and 7 are allowable over the cited art for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1-7 under 35 U.S.C. §103(a) is respectfully requested.

Conclusion

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Applicants respectfully petition under the provisions of 37 C.F.R. §1.136(a) and §1.17 for a two (2) month extension of time in which to respond to the Examiner's Office Action. The appropriate Extension of Time Fee is attached hereto.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 to schedule a Personal Interview.

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

Respectfully submitted,
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